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10/057,458

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EXAMINER

WONG, WARNER

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/057,458 | Applicant(s) PASQUALINO, CHRISTOPHER | |
| | Examiner WARNER WONG | Art Unit 2471 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/6/2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-19 and 23 is/are pending in the application.
- 4a) Of the above claim(s) 1-5 and 20-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-19 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 6-8 and 10 are rejected under 35 U.S.C. 102(b) as being unpatentable by Steudel (US 4,156,253) in view of Hannah (US 7,146,506).

Regarding claim 6, Steudel describes a method of communicating video signals over a communications link comprising shortening a blanking period in the data to accommodate auxiliary data without dropping any of the video frames (fig. 1b, col. 1, lines 61-65 & col. 2, lines 31-32, shortening the back porch, which is part of horizontal blanking period, for inserting TSI sound signals (auxiliary data), without dropping BAS video signals (frames). Alternatively valid for fig. 1c & col. 2, lines 50-55).

Steudel describes shortening the back porch of the blanking period, but fails to explicitly describe: shortening the blanking period itself.

Hannah describes a method of sending data in TMDS, comprising:

shortening the blanking period (col. 4, lines 9-20 & col. 7, lines 30-31, reduced blanking interval).

It would have been obvious to one with ordinary skill in the art at the time of invention by applicant to modify such that the actual blanking period is shortened as in Hannah within the video transmission for Steudel.

The motivation for combining the teachings is that it facilitates the display of digital format video information, especially the display of digital format television broadcast data (Hannah, col. 1, lines 43-46).

Regarding claim 7, Steudel further describes modifying a HSYNC signal in the data to accommodate the auxiliary data (col. 2, line 31 or 53-54, horizontal sync pulse (HSYNC signal) is shortened (modified)).

Regarding claim 8, Steudel further describes that the auxiliary data may be audio data (col. 1, lines 60-64, for insertion of sound (audio data)).

Regarding claim 10, Steudel and Kim combined describe that the communication link is a digital communication link (Kim, abstract & col. 6, lines 21-22, transmission via a high speed digital communication link).

2. Claim 10-13 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steudel in view of Kim as applied to claim 6, and further in view of Martin (WO 00/14626).

Regarding claim 10, Steudel already described modifying a HSYNC signal in all frames in which the auxiliary data is to be transmitted as per claim 7, but fails to describe modifying a VSYNC signal in all such frames.

Martin describes modifying a VSYNC signal in all frames (p. 10 & fig. 6, during (each) vertical blanking period which is used for synchronizing the (all) next frames (VSYNC signal), inserting STARTBLANK into the period (modifying VSYNC)).

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the video transmission method Steudel to alter the transmitted VSYNC signals as in Martin.

The motivation for combining the teachings is that it reduces the number of wires required for transmission (Martin, p. 2 para. 2).

Regarding claim 11, Steudel fails to explicitly describe inserting a notch in all said VSYNC signals.

Martin describes inserting a notch in all said VSYNC signals (p. 10 & fig. 6, where during (each) vertical blanking period which is used for synchronizing the next frames (VSYNC signal), a start blanking pulse STARTBLANK (notch) is inserted during the period) to mark/indicate additional data is present.

It would have been obvious to one with ordinary skill in the art at the time of invention to modify to insert a notch in the VSYNC signals as in Martin to let the receiving side know that there is additional data present in the transmission.

The motivation for combining the teachings is that it would clearly indicate the time at which additional data present in the transmission.

Regarding claim 12, Steudel and Martin combined describe all limitations set forth in claim 11 for inserting a notch in the VSYNC signals, but fail to explicitly describe

Art Unit: 2471

that inserting the notch includes inserting an 8 clock cycle pulse into said VSYNC signals.

However, inserting a notch of 8 clock cycle pulse which is considered to be optimal for audio packets of DVI-CE standard present no new or unexpected results with other lengths to for audio/auxiliary packets, so long as the packet is being accordingly transmitted and processed in a successful way. See MPEP 2144.05 and In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955).

Therefore, it would have been obvious to one with ordinary skill in the art at the time of invention by applicant to modify the invention of Martin to insert an 8 clock cycle notch into said VSYNC signals to obtain the invention as specified in claim 12.

Regarding claim 13, Steudel and Martin combined describe all limitations set forth in claim 11 for inserting a notch in the VSYNC signals, but fail to describe that the notch is inserted into said VSYNC signals 8 clock pulses after a first edge of said VSYNC signals.

However, inserting a notch 8 clock pulses after the first edge of the VSYNC signal present no new or unexpected results with other timeframes to insert the notch (for audio/auxiliary packets), so long as the packet is being accordingly transmitted and processed in a successful way. See MPEP 2144.05 and In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955).

Therefore, it would have been obvious to one with ordinary skill in the art at the time of invention by applicant to modify the invention of Martin to insert a notch 8 clock

Art Unit: 2471

cycle pulses after the first edge of the VSYNC signal to obtain the invention as specified in claim 12.

Regarding claim 23, Steudel describes a method of communicating video signals over a communications link comprising shortening the porch of a blanking period in the data to accommodate auxiliary data (fig. 1b, col. 1, lines 61-65 & col. 2, lines 31-32, shortening the back porch, which is part of horizontal blanking period, for inserting TSI sound signals (auxiliary data), without dropping BAS video signals (frames). Alternatively valid for fig. 1c & col. 2, lines 50-55).

Steudel describes shortening the back porch of the blanking period, but fails to explicitly describe:

shortening the blanking period itself,

wherein the communication link comprises a single link.

Hannah describes a method of sending data in TMDS, comprising:

shortening the blanking period (col. 4, lines 9-20 & col. 7, lines 30-31, reduced blanking interval).

the communication link comprises a single link (fig. 1, over a single bus 20 (link)).

It would have been obvious to one with ordinary skill in the art at the time of invention by applicant to modify such that the actual blanking period is shortened as in Hannah in the video transmission using a single communication link in Steudel.

The motivation for combining the teachings is that it facilitates the display of digital format video information, especially the display of digital format television broadcast data (Hannah, col. 1, lines 43-46).

Steudel also fails to explicitly describe using a vertical blanking period.

Martin describes using the vertical blanking period for auxiliary data transmission (abstract & p. 5 or p. 10, can use the vertical blanking period for transmitting data).

It would have been obvious to one with ordinary skill in the art at the time of invention to use the vertical blanking periods to transfer auxiliary data as in Martin instead of using the horizontal blanking period for such transfer in Hobbs and Steudel combined.

The motivation for combining the teachings is that it still reduces the number of wires, needed for data transmission across the system, thus cut cost and ease of system use. (Martin, p. 5, lines 5-8).

3. Claims 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steudel in view of Hannah and Martin as applied to claim 10 above, and further in view of Kim (6,870,930) – hereinafter referred to as Kim '930.

Regarding claim 14, Steudel, Hannah and Martin combined describe all limitations set forth in claim 10.

Steudel, Kim and Martin combined lack what Kim '930 describes: adapting control signals (col. 9, lines 12-16) to be compliant with the HDCP (content protection)

Art Unit: 2471

standard (col. 9, lines 37-64, where the control signals sent during DE low period are corrupted according to the DE corruption protocol which complies with HDCP.)

It would have been obvious to one with ordinary skill in the art at the time of invention by applicant to adapt (secure) the video control signals of Steudel and Martin combined to a content protection standard as per Kim '930.

The motivation being that "There is [also] a need for secure communication as a result of increase value of the communicated content [control signals] and the increased likelihood that communicated content will be copied or altered", Kim '930, col. 1, lines 30-34).

Regarding claim 15, Steudel, Hannah and Martin combined fail to explicitly describe that the control signal is transmitted while in the blank period when the auxiliary data is transmitted.

Kim '930 describes that the control signal is transmitted while in the blank period [when the auxiliary data is transmitted] (col. 9, lines 37-64).

It would have been obvious to one with ordinary skill in the art at the time of invention by applicant to transmit the control signal while in the blanking period also as in Kim '930.

The motivation being that "There is [also] a need for secure communication as a result of increase value of the communicated content [control signals] and the increased likelihood that communicated content will be copied or altered", Kim '930, col. 1, lines 30-34).

Regarding claim 16, Steudel, Hannah and Martin combined fail to describe that the control signal is ctl3.

Kim '930 describes that (one of the) control signals is ctl3 (col. 9, lines 15, control[3]).

It would have been obvious to one with ordinary skill in the art at the time of invention by applicant to transmit the control signal ctl3 as in Kim while in the blanking period of Hobbs, Steudel and Martin combined.

The motivation being that "There is [also] a need for secure communication as a result of increase value of the communicated content [control signals] and the increased likelihood that communicated content will be copied or altered", Kim '930, col. 1, lines 30-34).

Regarding claim 17, Steudel, Hannah, Martin and Kim '930 combined further describe that the content protection standard comprises a High bandwidth Digital Content Protection (HDCP) standard (Kim '930, col. 9, line 64).

Regarding claim 18, Steudel, Hannah, Martin and Kim '930 combined further describe adapting the control signal comprises generating a ctl3 input using at least one VSYNC signal (Kim '930, col. 9, lines 12-16, where control[3] (ctl3) signal is generated & sent during the low (blanking) periods in tandem with (using) VSYNC signals).

Regarding claim 19, Hobbs, Hannah, Steudel, Martin and Kim combined describe generating a ctl3 input, but fails to explicitly describe ensuring that the ctl3 input is a positive going pulse.

However, whether if ctl3 is a positive or negative going pulse present no new or unexpected results, so long as the adaptation of the control signal signifies the processing in a successful way. See MPEP 2144.05 and In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955).

Therefore, it would have been obvious to one with ordinary skill in the art at the time of invention by applicant to modify the invention of Hobbs, Steudel, Martin and Kim combined to comprise a positive going pulse for the ctl3 input to obtain the invention as specified in claim 19, so long as the adaptation of the control signal signifies the processing in a successful way

Response to Arguments

4. Applicant's arguments filed 11/6/2010 have been fully considered but they are not persuasive.

On p. 4 para. 1, the examiner would like to correct Applicant's status that "Claim 23 is added" is incorrect; claim 23 was already added in the previous response.

On p. 4 para. 5, the applicant argues that the previous Action was unclear how col. 4, teaches shortening a blanking period. The Examiner noted that col. 7, lines 30-31 has been previously cited "the first TDMS link is to transmit reduced blanking period" which should satisfy the clarity of the invention. The Examiner would like to take this opportunity to clarify the teaching of "shortening a blanking period" limitation by further citing col. 3, lines 19-20: "In high definition television pixel formats, a reduce blanking interval may be utilized with a single link."

Art Unit: 2471

From p. 4 last para. to p. 5 para. 2, the applicant argues that Martin is not combinable with Steudel. In particular the applicant cited Steudel col. 3, lines 39-43, "If a bandwidth of 13 kHz per sound channel is required two sound channels can be transmitted. In the case of the 625 line standard, the sound signals are advantageously sampled at twice the line frequency $2f_H$, i.e., at $2 \times 15.625 \text{ KHz} = 31.25 \text{ KHz}$, for example." The applicant concludes "using the vertical blanking interval would result in significantly lower sampling rate, for example, at 625 lines per from a sampling rate of 50Hz. This rate would not be suitable rate for sampling sound." The examiner respectfully disagrees.

The examiner carefully read the paragraphs from before to after the above recitation. The above recitation describes a known/previous 625-line standard in transmitting TV signals. The examiner understood that Steudel teaches horizontal blanking interval, and "sound signals are advantageously sampled twice the line frequency" as a solution. Hence, the above applicant conclusion is invalid: i.e. using a blanking interval would NOT result in significantly lower sampling rate because it is sampled twice and such rate is suitable for sampling sound.

The examiner would like to take this opportunity to further point out that Steudel also describes present-day standard in transmitting TV signals which also shortens the horizontal blanking period (see at least col. 2, lines 51-55).

Hence, Steudel does not teach away from combining with Martin as argued. Hence, the rejection stands.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Harvey (US 7,849,479) describing superimposing print characters on vertical blanking period, and Wilkinson (US 2010/0046554) describing ancillary data carriage on vertical and/or horizontal blanking interval.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WARNER WONG whose telephone number is (571)272-8197. The examiner can normally be reached on 6:30AM - 3:00PM, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2471

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Warner Wong
Primary Examiner
Art Unit 2471

/Warner Wong/
Examiner, Art Unit 2471